

REVERSIBLY-ACTIVATED NANOSTRUCTURED BATTERY

A battery having a nanostructured battery electrode is disclosed wherein it is possible to reverse the contact of the electrolyte with the battery electrode and, thus, to return a battery to a reserve state after it has been used to generate current. In order to achieve this reversibility, the nanostructures on the battery electrode comprise a plurality of closed cells and the pressure within the enclosed cells is varied. In a first embodiment, the pressure is varied by varying the temperature of a fluid within the cells by, for example, applying a voltage to electrodes disposed within said cells. In a second illustrative embodiment, once the battery has been fully discharged, the battery is recharged and then the electrolyte fluid is expelled from the cells in a way such that it is no longer in contact with the battery electrode.